

CLAIMS

1. An antibody which binds to a peptide consisting of SEQ ID NO.: 2 or SEQ ID NO.: 4.
2. The antibody of Claim 1, wherein said antibody is a monoclonal antibody.
3. The antibody of Claim 1, wherein said antibody is a polyclonal antibody.
4. The antibody of Claim 1, wherein said antibody is produced by hybridoma H2-8.
5. A DNA sequence encoding a peptide consisting of SEQ ID NO.: 2 or SEQ ID NO.: 4.
6. A method of detecting *in vitro* the presence or activity of IL-2R, wherein said IL-2R is measured by:
- a) contacting (1) a biological sample from a mammal in which the presence or activity of said IL-2R is suspected with (2) a peptide which binds to the antibody of Claim 1 under the conditions that allow binding of said IL-2R to said peptide to occur; and
- b) detecting whether binding has occurred between said IL-2R from said sample and the peptide which binds to the antibody of Claim 1.
7. A method for inhibiting the activity of an IL-2R comprising contacting said IL-2R with an amount of the peptide which binds to antibody of Claim 1 sufficient to inhibit binding of IL-2 to said IL-2R under conditions that allow binding of said peptide to said IL-2R to occur.
8. A method of inhibiting the activity of an IL-2R comprising contacting said IL-2R with an amount of the antibody of Claim 1 sufficient to inhibit bind of IL-2 to said IL-2R under conditions that allow binding of said peptide to said IL-2R to occur.
9. Use of a peptide comprising of SEQ ID NO.: 2 or SEQ ID NO.: 4 for the preparation of a medicament useful to induce in a patient selected useful activities of IL-2.
10. A vector containing the DNA sequence of Claim 5.
11. Use of the vector of Claim 10 for the preparation of a medicament useful to treat a patient deficient in IL-2 activity.
12. The use of Claim 9 wherein said peptide comprising of SEQ ID NO.: 2 or SEQ ID NO.: 4 is included in an admixture comprising a cytokine.

13. The use of Claim 9 wherein said peptide comprising of SEQ ID NO.: 2 or SEQ ID NO.: 4 is in an amount able to induce said useful activities.

14. The use of Claim 12 wherein the cytokine is IL-2, IL-4, IL-9, IL-7 or IL-15.

5 15. The use of Claim 14 wherein the amount of IL-2, administered per injection, is 1×10^6 international units.

10 16. A peptide, which is IP130, having SEQ ID NO.: 2 or SEQ ID NO.: 4 or a homologous sequence thereof which differs from SEQ ID NO.: 2 or SEQ ID NO.: 4 by one or more conservative changes, wherein said homologous sequence exhibits substantially the same activity or binding characteristics or both as SEQ ID NO.: 2 or SEQ ID NO.: 4.

17. The peptide of Claim 16, which is IP 130, having SEQ ID NO.: 2 or SEQ ID NO.: 4.

15 18. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4 having a conservative change of non-polar R-groups by other non-polar R groups in amino acids thereof.

19. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4, having a conservative change of uncharged polar R groups by other uncharged polar R groups in amino acids thereof.

20 20. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4, having a conservative change of charged polar R groups by other charged polar R groups in amino acids thereof.

25 21. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2, or SEQ ID NO.: 4 wherein Lys is substituted for Arg, or vice versa so that a positive charge is maintained.

22. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4, wherein Glu is substituted for Asp, or vice versa so that a negative charge is maintained.

30 23. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4, wherein Ser is substituted for Thr, such that a free-OH group is maintained.

24. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4, wherein Gln is substituted for Asn such that a free-NH₂ group is maintained.

25. The peptide of Claim 16, which is a homologous sequence of SEQ ID NO.: 2 or SEQ ID NO.: 4, wherein ~~said~~ activity comprises induction of SHC phosphorylation; or induction of the SHC/MAPK pathway.

add a^4

THE UNIVERSITY OF CHICAGO

add a 7